

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 4	PAGE 1
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Compliance Assurance Monitoring (CAM) Plan

Applicant's Name Los Angeles County Sanitation District (LACSD)- Calabasas Landfill

Mailing Address P.O. Box 4998
Whittier, CA 90607

Equipment Location 5200-5300 Lost Hills Road,
Agoura, CA 91301-2340

APPLICATION 526755, FACILITY ID 042514

Plan Description

This compliance assurance monitoring (CAM) plan for non-methane hydrocarbons (NMHC) emissions generated by municipal solid wastes (MSW) landfill which are collected in a gas collection system (pollutant specific emission unit, PSEU) and controlled using three landfill gas (LFG) with natural gas augmentation turbines and a LFG flaring system with 9 LFG flares as air pollution control equipment.

Background

On August 26, 2011, Los Angeles County Sanitation District (LACSD)- Calabasas Landfill submitted this application for a CAM plan for the three LFG turbines A/Ns 458588 through 458590 and the LFG flares (1-9) Permit F77394, A/N 440826 used to control emissions generated by the MSW at this landfill. The Initial Title V permit for this facility was issued May 23, 2006. The facility has applied for a Title V renewal (A/N 516550) which will incorporate this CAM plan into the Title V Facility Permit.

This compliance assurance monitoring plan is to comply with the requirements of 40 CFR 64, Compliance Assurance Monitoring (CAM). This regulation became effective November 21, 1997, however requirements of the plan were delayed while the Title V program was being implemented. Therefore, owners and operators were subject to CAM plan requirements during the Initial Title V renewal. This regulation affects emission units at the source subject to a federally enforceable emission limit or standard that uses a control device to comply, and either pre-control or post-control emissions exceed Title V thresholds. See Sample Permit Condition tagged with 40 CFR 64, which are imposed on the three gas turbines and flare system to comply with the requirements of 40 CFR 64.

CAM Applicability

Requirements are applicable to pollutant-specific emission units at a major source that is required to obtain a State (Part 70) or Federal (Part 71) operating permit. The equipment has pre-control unit emissions of regulated air pollutant that are equal to or greater than 100% of the amount in tons per year, required for a source to be classified as a major source. The applicable Major Source Threshold (MST) is 10 tons/year of total non methane hydrocarbons (TNMHC).

The uncontrolled TNMHC emissions based on maximum permitted LFG flow and measured TNMHC concentration from the landfill are as follows.

$$\begin{aligned}
 R1 &= 1,751 \text{ ppm} \times 8,700 \text{ scfm} / 379\text{E}6 \text{ scf/lbmole} \times 16 \text{ lb/lbmole} \times 60 \text{ min/hr} \\
 &= 38.59 \text{ lbs/hr} \qquad \qquad \qquad = 926.08 \text{ lbs/day} \qquad \qquad \qquad = 338,019.32 \text{ lbs/year} \quad = 169.01 \text{ tons/year}
 \end{aligned}$$

The controlled TNMHC emissions are based on the maximum (PTE) permitted emission rates.

Control Unit 1: LFG Turbines, A/Ns 458588-458590

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R2(turbine) = 0.53 lbs/hr = 12.70 lbs/day = 4,635.50 lbs/year = 2.32 tons/year
 For 3 turbines = 1.59 lbs/hr = 38.10 lbs/day = 13,906.50 lbs/year = 6.95 tons/year

Control Unit 2 (standby): LFG Flares 1-9, Permit F77394, A/N 440826

R2(flares 1-6) = 0.74 lbs/hr = 17.76 lbs/day = 6,482.40 lbs/year = 3.24 tons/year
 For 6 flares = 4.44 lbs/hr = 106.56 lbs/day = 38,894.40 lbs/year = 19.45 tons/year
 R2(flares 7-9) = 0.37 lbs/hr = 8.88 lbs/day = 3,241.20 lbs/year = 1.62 tons/year
 For 3 flares = 1.11 lbs/hr = 26.64 lbs/day = 9,723.60 lbs/year = 4.86 tons/year
 R2(total) = 5.55 lbs/hr = 133.20 lbs/day = 48,618.00 lbs/year = 24.31 tons/year

Potential Controlled emissions based on Rule 1150.1 Emission Limits

R2 = 1,751 ppm x 8,700 scfm / 379E6 scf/lbmole x 16 lb/lbmole x 60 min/hr x (1-0.98)
 = 0.77 lbs/hr = 18.52 lbs/day = 6,760.39 lbs/year = 3.38 tons/year
 R2 = 20 ppm x 8,700 scfm / 379E6 scf/lbmole x 16 lb/lbmole x 60 min/hr
 = 0.44 lbs/hr = 10.58 lbs/day = 3,860.87 lbs/year = 1.93 tons/year

CAM Requirements

CAM plan shall:

- I. Describe the indicators to be monitored
- II. Describe the measurement approach for the indicators
- III. Describe the ranges or the process to set indicator ranges
- IV. Describe the performance criteria for the monitoring, including
 - A. Specifications for obtaining representative data
 - B. Verification procedures to confirm the monitoring's operational status
 - C. Quality assurance and control procedures
 - D. Monitoring frequency
 - E. Data collection procedure
 - F. Data averaging period
- V. Provide a justification for the use of parameters, ranges, and monitoring approach (see section III of applicants CAM Plan submittal)
- VI. Provide emissions test data (see Indicator No. 1)
- VII. Provide an implementation plan for installing, testing, and operating the monitoring, if necessary

Permits are required to have the following items (see re-issued gas turbines A/Ns 458588-458590 and LFG flares (1-9) Permit F77394, A/N 440826):

- I. The approved monitoring approach, including the indicators or the means to measure the indicators to be monitored
- II. A definition of exceedances or excursions
- III. The duty to conduct monitoring
- IV. Minimum data availability and averaging period requirements
- V. Milestones for testing, installation, or final verification

Applicable Regulations, Emission Limits, and Monitoring Requirements

Rules

401 Visible emissions
 402 Nuisance
 404 PM Concentration

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407	Liquid and Gaseous Air Contaminants
409	Combustion Contaminants
431.1	Sulfur Content of Gaseous Fuels
40 CFR Part 63, Subpart AAAA	MSW Landfill NMOC Emission Limit
40 CFR Part 64	Compliance Assurance Monitoring
1150.1	Landfill NMOC Emission Limit
1303	New Source Review ROG Emission Limit

Table 1 Monitoring Approach for the CAM Plan for Flare System

		Turbines under A/Ns 458588, 458589, & 458590	Flares under Permit F77394, A/N 440826
I	Indicator	Combustion Chamber Temperature	Flare Exhaust Temperature
II	Measurement Approach	Continuous Temperature Indicator and Recorder	Continuous Temperature Indicator and Recorder
III	Indicator Range and Corresponding Permit Condition (underlined)	Exhaust temperature $1100^{\circ}\text{F} \leq$, $\geq 1300^{\circ}\text{F}$ <u>Cond# 11</u>	Exhaust temperature $< 1400^{\circ}\text{F}$ <u>Cond# 20</u>
IV	Performance Criteria		
	A. Specifications/ Data Representativeness	Temperatures measured with thermocouples installed in the combustion chamber with minimum accuracy of +/- 1% and recorded with a temperature monitor.	Temperatures measured and recorded with a temperature monitor installed in the combustion chamber with minimum accuracy of +/- 1%.
	B. Verification of Operational Status	The temperature data will be reviewed daily by facility personnel.	The temperature data will be reviewed daily by facility personnel.
	C. QA/QC Practices and Criteria	The temperature monitor will be calibrated and maintained per manufacturer specifications.	The temperature monitor will be calibrated and maintained per manufacturer specifications.
	D. Monitoring Frequency	Continuous.	Continuous.
	E. Data Collection Procedures	Temperature data will be calculated and stored electronically.	Temperature monitor collects temperature data continuously and stores the data in accordance with A/N 522387 the facility's Rule 1150.1 Monitoring Plan.
	F. Averaging Period	1 hour	15 minutes

Quality Improvement Plan (QIP)

The semi-annual monitoring report shall include the total operating time of this equipment and the total accumulated duration of all deviations for each semi-annual reporting period. The operator shall implement a Quality Improvement Plan (QIP) if an accumulation of deviations exceeds 5% duration of this equipment's total operating time for any semi-annual reporting period. The required QIP shall be submitted to the AQMD within 90 calendar days after the due date for the semi-annual monitoring report. Each deviation shall trigger inspection and documentation of corrective actions.

Conclusions and Recommendations

This CAM plan is in compliance with the applicable requirements of 40 CFR part 64. Approval of the CAM plan is recommended under A/N 526755. The 3 gas turbines A/Ns 458588-458590 and LFG flares

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(1-9) Permit F77394, A/N 440826 are recommended to be re-issued to incorporate the applicable CAM conditions into the existing permit.